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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,766	06/05/2001	Reza Alani	GAT 0074 PA	5288

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07/10/2003

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EXAMINER

TRAN, HUAN HUU

ART UNIT PAPER NUMBER

2861

DATE MAILED: 07/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

FILE COPY

Office Action Summary

Application No.

09/874,766

Applicant(s)

ALANI, REZA

Examiner

Huan H. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-20, 26-32, 36, 42-44, 46-49, 51-53, 59-61, 63 and 64 is/are rejected.
- 7) ☒ Claim(s) 4-8, 21-25, 33-35, 37-41, 45, 50, 54-58, 62 and 65-67 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 9-20, 26-32, 36, 42-44, 46-49, 51-53, 59-61, 63-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grünewald (US Patent No. 5986264 cited in the IDS filed on 09/07/01) in view of Doong et al. (US Patent No. 5940678 cited in the IDS filed on 01/09/02).

With respect to claims 1, 18, 36, 51, Grünewald discloses an ion beam milling system (and a corresponding method) for electron microscopy specimen preparation comprising:

a chamber (10) communicating with a source of vacuum for said chamber, first and second ion generating guns (1, 2) positioned in said chamber, a rotatable specimen holder (6), a specimen (4) having length and thickness dimensions, said specimen mounted to said specimen holder, each of said first and second ion guns positioned to cause milling of said surface of said specimen to provide an electron transparent surface of said specimen adjacent said ion beam masking member.

With respect to claims 2, 19, 52, in Grünewald said ion beam masking member on said surface of said specimen is positioned substantially perpendicular to streams of energized ions and neutrals emitted from said first and second ion generating guns.

With respect to claims 3, 20 and 53, in Grünewald said ion beam masking member is thinned during said milling.

With respect to claims 9, 26, 42 and 59, in Grünewald an imaging device (3, 5, 7-9) is adapted for viewing the progress of milling.

With respect to claims 10, 27, 43 and 60, in Grünewald said imaging device comprises a light microscope (5).

With respect to claims 11, 28, 44 and 61, in Grünewald said imaging device comprises a scanning electron microscope (3).

With respect to claim 12, Grünewald including a detector

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adapted to measure the progress of milling.

With respect to claimd 13, 29 and 46, 64 in Grünewald said specimen holder is rotatable during milling of said specimen (Col. 3, line 50).

With respect to claims 14, 30 and 49, Grünewald including a controller (19) for controlling the power supplied to said ion generating guns.

With respect to claims 15 and 31, in Grünewald power to said ion generating guns is controlled to produce sector ion milling of said specimen.

With respect to claims 16, 32 and 47, 63, in Grünewald said specimen holder is rotatable about a generally vertical axis during milling.

With respect to claims 17 and 48, in Grünewald said specimen holder is rotatable about a generally horizontal axis during milling (tilting).

Grünewald does not teach or suggest an ion beam masking member secured to a surface comprising the thickness dimension of said specimen such that there is no relative movement between said specimen and said ion beam masking member during milling.

Doong et al. teaches a method for forming precisely cross-sectioned electron transparent samples wherein at least one metallic mask (32) is formed on a surface of a specimen specimen such that there is no relative movement between said specimen and said ion beam masking member during milling.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Doong et al. into that of Grünewald in order to simplify the milling process and to reduce potential for errors if the mask is not secured to the surface of the specimen.

Allowable Subject Matter

3. Claims 4-8, 21-25, 33-35, 37-41, 45, 50, 54-58, 62, 65-67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


4. The following is a statement of reasons for the indication of allowable subject matter: Claims 4-8, 21-25, 33-35, 37-41, 45, 50, 54-58, 62, 65-67 contain subject matters not taught or suggest in the cited references.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huan H. Tran whose telephone number is (703) 308-0749. The examiner can normally be reached on M-F with alternate Friday off, from 7:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1749.



Huan H. Tran
Primary Examiner
Art Unit 2861

hht
June 27, 2003